

1 **What is claimed is:**

- 2 1. A circuit assembly comprising:
3 a main assembly board;
4 a main assembly housing; and
5 a pre-assembled partition circuit assembly having a partitioned
6 circuit element mounted within a partitioned circuit housing and a plurality of
7 connectors, said plurality of connectors placing said partitioned circuit element
8 in communication with said main assembly board when said partitioned circuit
assembly is inserted into said main assembly board.
- 1 2. A circuit assembly as described in claim 1 wherein said
2 partitioned circuit assembly further includes a heat sink element.
- 1 3. A circuit assembly as described in claim 1 wherein said
2 partitioned circuit assembly further includes passivation material positioned
3 within said partitioned circuit housing.
- 1 4. A circuit assembly as described in claim 1 wherein said
2 partitioned circuit assembly further includes a seal element such that said
3 partitioned circuit assembly becomes sealed to said main assembly housing after
4 said partitioned circuit assembly is inserted into said main assembly board.
- 1 5. A circuit assembly as described in claim 1 wherein said
2 partitioned circuit assembly further includes a heat sink element, said
3 partitioned circuit element mounted to said heat sink element using thermally
4 conductive material.
- 1 6. A circuit assembly as described in claim 1 wherein said
2 main assembly housing includes at least one main assembly port, said at least
3 one main assembly port allowing said partitioned circuit assembly to be inserted
4 into said main assembly board through main assembly housing.

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1 7. A circuit assembly as described in claim 1 further
2 comprising at least one communication port therein.

1 8. An engine controller comprising:
2 a main assembly board;
3 a main assembly housing; and
4 a pre-assembled partition circuit assembly having a partitioned
5 circuit element mounted within a partitioned circuit housing and a plurality of
6 connectors, said plurality of connectors placing said partitioned circuit element
7 in communication with said main assembly board when said partitioned circuit
8 assembly is inserted into said main assembly board.

1 9. An engine controller as described in claim 8 wherein said
2 partitioned circuit assembly further includes a heat sink element.

1 10. An engine controller as described in claim 8 wherein said
2 partitioned circuit assembly further includes passivation material positioned
3 within said partitioned circuit housing.

1 11. An engine controller as described in claim 8 wherein said
2 partitioned circuit assembly further includes a seal element such that said
3 partitioned circuit assembly becomes sealed to said main assembly housing after
4 said partitioned circuit assembly is inserted into said main assembly board.

1 12. An engine controller as described in claim 8 wherein said
2 partitioned circuit assembly further includes a heat sink element, said
3 partitioned circuit element mounted to said heat sink element using thermally
4 conductive material.

1 13. An engine controller as described in claim 8 wherein said
2 main assembly housing includes at least one main assembly port, said at least
3 one main assembly port allowing said partitioned circuit assembly to be inserted
4 into said main assembly board through main assembly housing.

1 14. An engine controller as described in claim 8 further
2 comprising at least one communication port therein.

1 15. A partitioned circuit assembly for integration into an
2 engine controller comprising:
3 a partitioned circuit element;
4 a partitioned circuit housing surrounding said partitioned circuit
5 element; and
6 a plurality of connectors.

1 16. A partitioned circuit assembly as described in claim 15
2 wherein said partitioned circuit housing includes a heat sink portion, said
3 partitioned circuit element being mounted to said heat sink portion using a
4 thermal connective adhesive.

1 17. A partitioned circuit assembly as described in claim 15
2 wherein the partitioned circuit assembly may be removably mounted to the
3 engine controller.